\*100\* Waterjet

Memo

0.00

FLOW CNC Waterjet

1-Cut as per Dwg D3065 Dwg Rev: 13

2-Deburr as required

110

QC2- Inspect parts off machine FAI/FAIB

0.00

\*110\*

QC

Memo

0.00

Quality Control

Page 1

Insp.

Stamp

NCR: Y	⁄es	/ No				WORK ORDER NON-	CON	NFORN	MANCE / UPI	DATE		QA Closed:	Date	v:
Work Orde	er: ˌ					DISPOSITION	,			<b>AGAIN</b> Crosstu	ST DEI	PARTMENT/		Engineering
Part N				·	·	Rework Scrap Use-as-is Work Order Update		t Therm	Skid-tube  Machining noforming Large Fab	Small F Finishi Compos	ab ng		d. Eng. Coor. e/Packaging Supplier	Quality Other
NCR N	NO.			<del> </del>		work Order Opdate	_		targe rab[]	Compos	"e		3dppilet [	
Root Cause		Date	Step	Qty		ption of work order update or Non-conformance	1	nitial iief Eng	Act Descr	ion iption		Sign & Date	Verification	QC Inspector
Doc/Data Equip/Tooling Operator Material Setup Other Process Supplier Training Unapproved														
			· · · · · · · · · · · · · · · · · · ·				AUL	T CATE	GORY					
Landi		Bending Centre No Cracks Crushed/ Cuffs Heat Trea Inspectio Ripples in	Crimped at n Strip in ı Bend	Tube		General Bend BOM/Route Broken/Damaged Burrs Contamination Countersink Cut Too Short Drill Holes		Instruct Mainte Mislabe Misread Offset	ion Incomplete ions Incomplete/U enance eled	Jnclear		Ovalized Over/Under Part Incorred Part Lost/Mi Part Moved Positioned V Power Loss/	ssing Vrong	Pressure/Forced Temperature/Cure Weld Wrong Stock Pulled Other
		Torque W	/aves in E	.xtrusio	n j	Drawing	1	Jour or c	calibration					

Out of Sequence

Outside Dimensions

DQA:

Date:

Turning Sequence

Wave/Twist in Tube

Finish

Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Work Orde		993			*979	93*							Page 2
Revision ID:	D3065-1 Step Spacer				Accept	*N900	<b>040</b>	100	<b>)*</b>	Setup	Start Stop		S1* S2*
	3/01/13	<b>Start Qty:</b> 40.00 <b>Req'd Qty:</b> 40.00		*40* *40*		Cust Item I	D:						, ,
Approvals:	Process Pla	n:	Date: _		Tooling: SPC (Y/N):		ite:		F		Start Stop		₹1* ₹2*
Sequence ID/ Work Center II	)	Operation Description			Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Rejec Qty		Reject Number	Insp. Stamp
120 *170* QC Quality Control		QC8- Inspect parts - secon	nd check		0.00	7		c	40	<del></del>			
*130 *130* Small Fab Small Fab		Small Fab  Memo  Deburr if nec	essary.		0.00								
140 <b>*14</b> Brake NC		NC BRAKE			0.00				40		· · ·	·	The state of the s

Bend as per Dwg D3065

Brake NC

											DQA:	Date:	. *
NCR:	Yes	/ No				WORK ORDER NON-C	CON	VFOR	MANCE / UPDATE			5.	
								,			QA Closed:	Date:	
NAV a mla O mal						DISPOSITION			AGAINS	T DE	PARTMENT/	PROCESS	
Work Ord	er: –					Rework	1		Skid-tube Crosstub	_ ا		Water Jet	Engineering
Part f	N۵					Scrap	1 1		Machining Small Fal	<del></del>	Proc	d. Eng. Coor.	Quality
raiti	10				<del></del>	Use-as-is	1		noforming Finishin	_		e/Packaging	Other
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	_		•				-					,	
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Cause		Date	Step	Qty		or Non-conformance	Ch	ief Eng	Description		Date	Verification	QC Inspector
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Landi	ng G	ear				General							
201101		Bending				Bend		Grain			Ovalized		Pressure/Forced
	-	Centre No	ot Concer	ntric to	o/s	BOM/Route	$\vdash$	Hardwa	are		Over/Under	tolerance	Temperature/Cure
	$\vdash$	Cracks				Broken/Damaged		4	ion Incomplete		Part Incorred	et -	Weld
	$\vdash$	Crushed/	Crimped.			Burrs		Instruct	tions Incomplete/Unclear		Part Lost/Mi	ssing	Wrong Stock Pulled
		Cuffs	•			Contamination		Mainte	enance		Part Moved		_
		Heat Trea	it			Countersink		Mislabe	eled		Positioned V	Vrong	_

Misread

Out of Calibration

Out of Sequence

Outside Dimensions

Offset

Other

Power Loss/Surge

Ripples in Bend

Turning Sequence

Wave/Twist in Tube

Inspection Strip in Tube

Torque Waves in Extrusion

Cut Too Short

Drill Holes

Drawing

Finish Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Work Orde March-01-13 1:		993.		*979	93*							Pag
Item ID: Revision ID: Item Name:	D3065-1 Step Spacer			Accept	*N9000	140	100	)*	Setup	Start Stop	14,	S1* S2*
Start Date: Required Date: Reference:	3/01/13 4/08/13	Start Qty: 40.00 Req'd Qty: 40.00	*40* *40*		Cust Item ID: Customer:							
Approvals:	Process Pla	an:	Date:	Tooling:	Date	):			Run	Start	*N	R1*
	QC:		Date:	<b>SPC (Y/N):</b>	Date	:				Stop	*N	R2*
Sequence ID/ Work Center II	)	Operation Description		Set Up/ Run Hours	Tool ID	Tool#	Plan Code	Accept Qty	Re Qt		Reject Number	Insp. Stamp
*150 *150* QC Quality Control		QC5- Inspect part comple  Memo	teness to step on W/O	0.00	,			40.	] -			· •
160 *160* HandFinish		Chemical Conversion Coa	ıt per QS1005 4.1	0.00	-			40		H)	<u>3.5</u>	8

170

QC7-Inspect Chemical Conversion Coat

0.00

\*170\*

Hand Finishing

Quality Control

Memo

Memo

0.00

NCR:	Yes ,	/ No				WORK ORDER NON-C	ON	IFORN	MANCE / UPDATE		_		
											QA Closed:	Date:	
Work Ord	er:					DISPOSITION			AGAINS	T DE	PARTMENT/	PROCESS	
Part I	_ No					Rework Scrap Use-as-is Work Order Update		Therm	Skid-tube Crosstub Machining Small Fa Ioforming Finishin Large Fab Composit	b g		Water Jet I. Eng. Coor. e/Packaging Supplier	Engineering Quality Other
Root					Descri	ption of work order update	lı	nitial	Action	•	Sign &		
Cause	ļ	Date	Step	Qty	(	or Non-conformance	Chi	ief Eng	Description		Date	Verification	QC Inspector
Doc/Data													
Equip/Tooling													
Operator				1									
Material													
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Other													
Process													
Supplier													
Training													
Unapproved													
						<u>F.</u>	AUL	T CATE	GORY				
Landi	ing Ge	ear				General		•			٦	_	7
	Шв	ending				Bend	Ш	Grain			Ovalized	<u> </u>	Pressure/Forced
		entre No	ot Concer	ntric to	o/s	BOM/Route		Hardwa	re		Over/Under	tolerance	Temperature/Cure
		racks				Broken/Damaged	Ш	Inspecti	on Incomplete	L	Part Incorred	it	Weld
		crushed/	Crimped.			Burrs	Ш	Instruct	ions Incomplete/Unclear		Part Lost/Mi	ssing	Wrong Stock Pulled
		Cuffs				Contamination		Mainte	nance		Part Moved		
		last Tras	t			Countersink		Mislahe	led		Positioned V	√rong .	

Misread

Out of Calibration

Out of Sequence

Outside Dimensions

Offset

Cut Too Short

Drill Holes

Drawing

Finish Folio DQA:

Power Loss/Surge

Other

Date:

Turning Sequence

Wave/Twist in Tube

Ripples in Bend

Inspection Strip in Tube

Torque Waves in Extrusion

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

				· · · · · · · · · · · · · · · · · · ·									
Work Ore	der ID 97 1:57:11 PM	993		*979	993*							Page 4	
Item ID: Revision ID:	D3065-1	and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s		Accept	*N900	040	100	)*	Setup	Start	*N	S1*	
Item Name:	Step Spacer									Stop	*N	S2*	
Start Date:	3/01/13	Start Qty: 40.00	*40*		Cust Item I	D:							
Required Dat Reference:	te: 4/08/13	Req'd Qty: 40.00	*40*		Customer:							٠	
Approvals:	Process Pl	an:	Date:	Tooling:	D:	ate:	_		Run	Start	*N	R1*	
	QC:		Date:	<b>SPC (Y/N):</b>	D:	ate:				Stop	*N	R2*	
Sequence ID/ Work Center		Operation Description Identify as per dwg & Sto	ack Location & A	Set Up/ Run Hours	Tool ID	Tool#	Plan Code	Accep Qty	t Re Qt		Reject Number	Insp. Stamp	
*180* Packaging		Memo	on bounding y	0.00				40x	, – –			<del>\$</del> )3	65

190

Packaging

QC21- Final Inspection - Work Order Release

0.00

\*190\*

Quality Control

Memo

0.00

MUS 13-05-08

											DQA:	Date	e:
NCR: \	Yes	/ No				WORK ORDER NON-	100	<b>NFORN</b>	MANCE / UPDATE		•	<u></u>	
											QA Closed:	Date	2:
Morle Orde	٠					DISPOSITION			AGAIN	IST DE	PARTMENT,	/PROCESS	
Work Orde	er			······································		Rework	1		Skid-tube Crosstu	ıbe	]	Water Jet	Engineering
Part N	No.					Scrap			Machining Small I	· · · · ·	Pro	d. Eng. Coor.	Quality
İ	-					Use-as-is		ł .	oforming Finish	~ <del>-</del> -	Rec/Sto	re/Packaging	Other
NCR N	۷o. <sub>-</sub>					Work Order Update	]		Large Fab Compos	site[	J	Supplier	
Root					Descri	ption of work order update		Initial	Action	*****	Sign &		
Cause		Date	Step	Qty	C	or Non-conformance	Ch	nief Eng	Description		Date	Verification	QC Inspector
Doc/Data	Ш												
Equip/Tooling			·										
Operator	Ш												
Material	Ш												
Setup	Ш												
Other	Ш												
Process	Ш					•							
Supplier													
Training													
Unapproved												<u> </u>	
						F	AUL	T CATE	GORY				
Landi	ng G	iear				General	_	1		_	٦	г	
	Ш	Bending				Bend		Grain		_	Ovalized	1	Pressure/Forced
	Ш	Centre No	ot Concer	ntric to (	o/s	BOM/Route	<u> </u>	Hardwa	re		Over/Under	F	Temperature/Cure
		Cracks				Broken/Damaged		Inspecti	on Incomplete		Part Incorre	ł	Weld
		Crushed/	Crimped.			Burrs		- 4	ions Incomplete/Unclear		Part Lost/M	issing	Wrong Stock Pulled
		Cuffs				Contamination		Mainte	nance		Part Moved		
		Heat Trea	it			Countersink		Mislabe	led	L	Positioned \		
		Inspection	n Strip in	Tube		Cut Too Short		Misread	1		Power Loss,	'Surge	Other
		Ripples in	Bend			Drill Holes		Offset					

Out of Calibration

Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drawing

Finish Folio

<sup>.</sup> H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

March-01-13 1:57:10 PM

Work Order ID:

97993

Parent Item:

D3065-1

Parent Item Name:

Step Spacer

**Start Date:** 3/01/13

Required Date: 4/08/13

**Start Qty: 40.00** 

Required Qty: 40.00

**Comments:** 

IPP: C02.11.01Incorporated D3066-1 IPPKJ/RF IPP: D06.04.25Water iet EC

	IPP: D06.04.23 V	valer jel		EC									
Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M2024T3S.040		Purchased	No			100	sf	209.2877	0.1238	5.212632			-
2024-T3 .040 sheet											_h//	13.05°	. 05

<b>Location</b>	Loc Qty	Loc Code	1 .0
MAT022	209.2876922		124987
120605	65.8254832		
121197	57.187894		
122136	31.78		
123217	54.494315		-

									DQA:	Date:	
NCR: Yes	/ No				WORK ORDER NON-C	ONFOR	MANCE / UF		QA Closed:	Date:	
Work Order:					DISPOSITION			AGAINST DE	PARTMENT	/PROCESS	
Part No.		-			Rework Scrap Use-as-is	i 1	Skid-tube Machining noforming	Crosstube Small Fab Finishing		Water Jet d. Eng. Coor. re/Packaging	Engineering Quality Other
NCR No.					Work Order Update		Large Fab	Composite		Supplier	
Root				Descri	ption of work order update	Initial	А	ction	Sign &		
Cause	Date	Step	Qty		or Non-conformance	Chief Eng	Des	cription	Date	Verification	QC Inspector
oc/Data											
quip/Tooling											
perator	]										
/laterial	]	l									
etup	1										
Other	1										
rocess	1		·	***							
upplier				, , , ,							
raining	1										
Inapproved			-	:							

**FAULT CATEGORY** 

## General **Landing Gear** Pressure/Forced Bend Grain Ovalized Bending Temperature/Cure BOM/Route Over/Under tolerance Centre Not Concentric to O/S Hardware Weld Part Incorrect Broken/Damaged Inspection Incomplete Cracks Part Lost/Missing Wrong Stock Pulled Instructions Incomplete/Unclear Crushed/Crimped. Burrs Contamination Maintenance Part Moved Cuffs Positioned Wrong Mislabeled Heat Treat Countersink Other Power Loss/Surge Misread Inspection Strip in Tube Cut Too Short Drill Holes Offset Ripples in Bend Out of Calibration Torque Waves in Extrusion Drawing Out of Sequence Finish Turning Sequence Outside Dimensions Folio Wave/Twist in Tube

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

DART AEROSPACE LTD	Work Order:	97993
Description: Step Spacer	Part Number:	D3065-1
Inspection Dwg: D3065 Rev: B		Page 1 of 1

## FIRST ARTICLE INSPECTION CHECKLIST

X First Article Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.250	. +/-0.010	0.249	V		1	JKM-01
2.093	+/-0.010	2.090	1		V	
3.936	+/-0.010	3.834	/	-	V	
4.186	+/-0.010	4.186	1		V	
0.587	+/-0.010	0.587	V		1/	
Ø0.128	+0.005/-0.001	0.132	V		V	
R0.125	+/-0.010	RO.125	1		RG	
3.465	+/-0.010	RO.125 3.465	V		V	
Ø1.250	+0.012/-0.001	1.252	/		V	
0.368	+/-0.010	0.366	V	"- A. A.	V	
0.871 (Pitch)	+/-0.005	0.872	/		V	
0.040	+/-0.010	0.040	/		V	

			<u>~ 0.</u>		
Measured by:	MM	Audited by:	27	Prototype Approval:	
Date:	13.05.05	Date:	13-57	Date:	

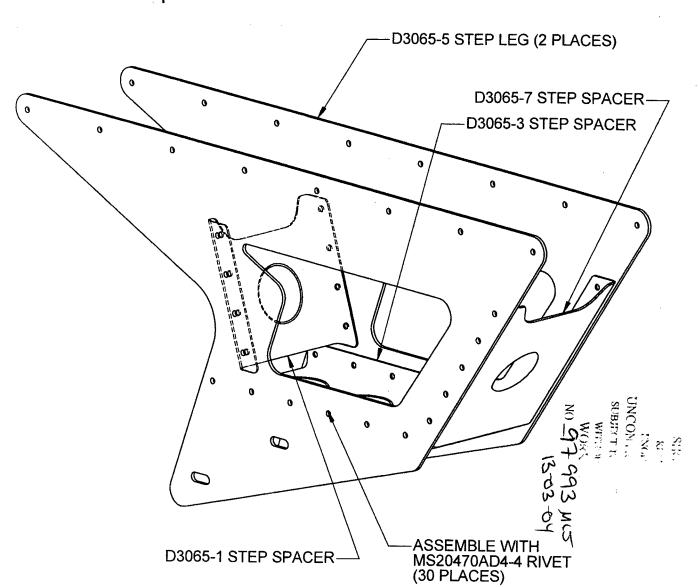
Rev	Date	Change	Revised by	Approved
A	03.09.22	New Issue	KJ/RF	
В	06.06.23	Dwg Rev. changed	KJ/JLM	1
С	07.02.07	Dimension 0.040 added	KJ/JLM X	adl





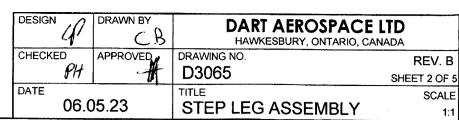
DESIGN	4	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		
CHECK		APPROVED	DRAWING NO.	REV. B	
	PH		D3065	SHEET 1 OF 5	
DATE	06.0	NE 22	TITLE A COSTABLY	SCALE	
 06.05.23		15.25	STEP LEG ASSEMBLY	1:2	
Α	02	2.09.11	NEW ISSUE		
B 06.05.23		3.05.23	ADD 6061-T6 MATERIAL, ADD SLOTS TO D3065-5		

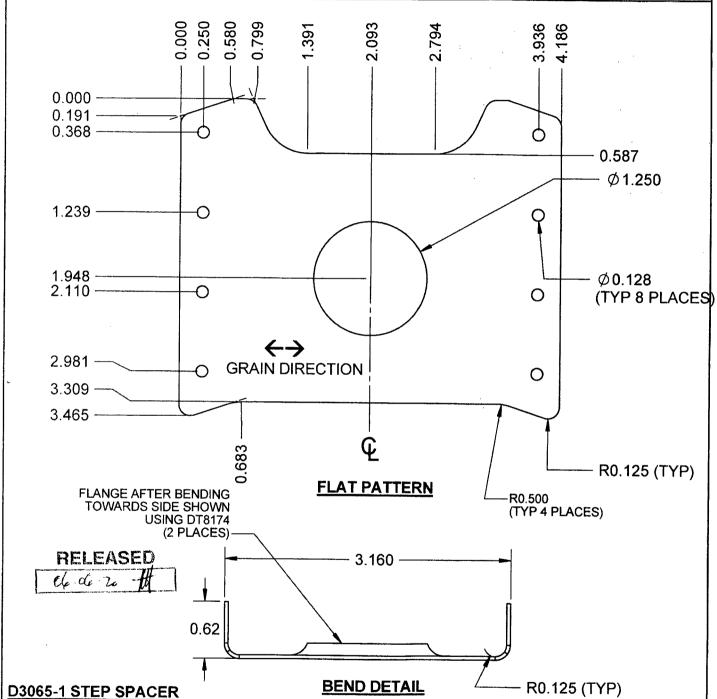
## RELEASED Color 20 H



## **D3065-041 STEP LEG ASSEMBLY**







- 1) MATERIAL: 2024-T3 (QQ-A-250/4) 0.040 THICK (REF DART SPEC. M2024T3S.040)
- 2) FINISH: ACID ETCH & ALODINE PER DART QSI 005 4.1
- 3) BREAK ALL SHARP EDGES 0.005 TO 0.010 4) PART IS SYMMETRIC ABOUT CENTERLINE
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

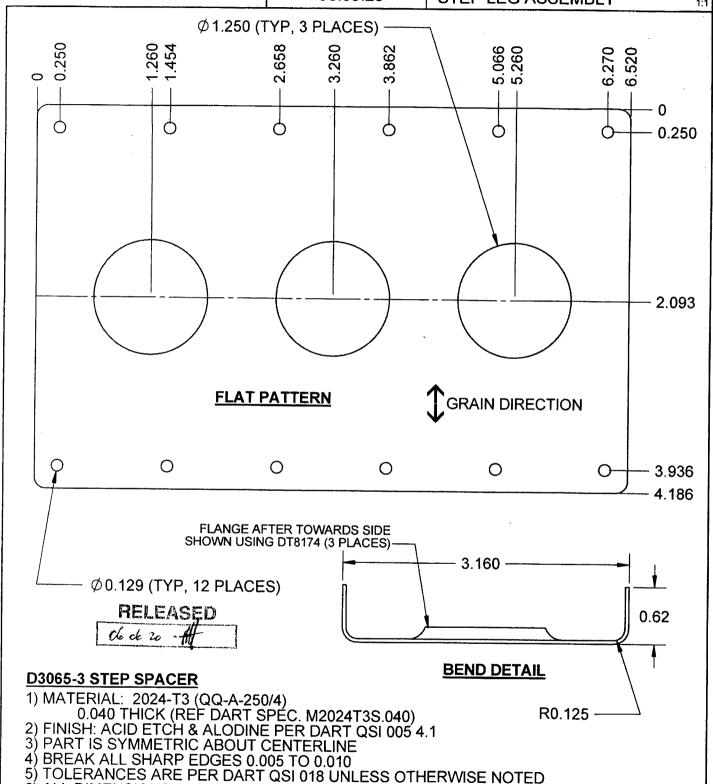
6) ALL DIMENSIONS ARE IN INCHES

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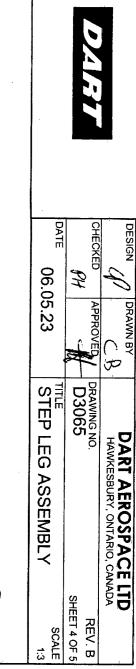


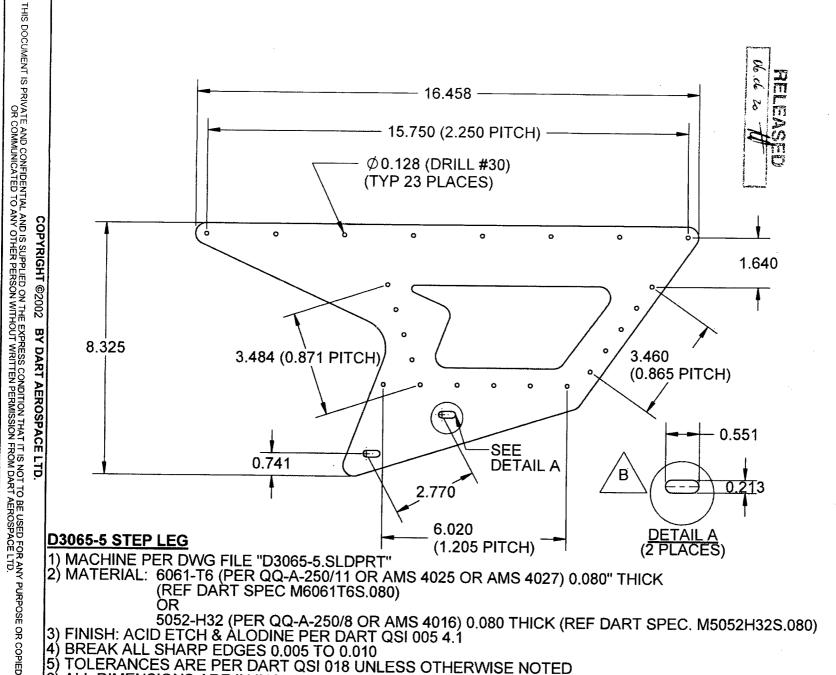
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6) ALL DIMENSIONS ARE IN INCHES

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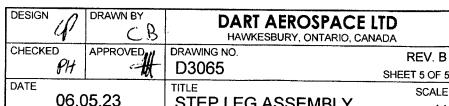
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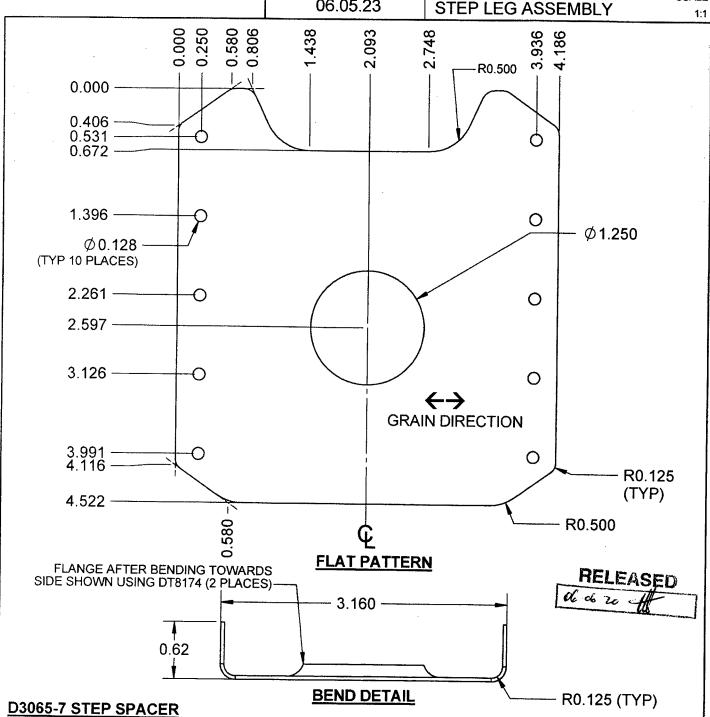




4) BREAK ALL SHARP EDGES 0.005 TO 0.010
5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
6) ALL DIMENSIONS ARE IN INCHES







- 1) MATERIAL: 2024-T3 (PER QQ-A-250/4) 0.040 THICK (REF DART SPEC. M2024T3S.040)
- 2) FINISH: ACID ETCH & ALODINE PER DART QSI 005 4.1
- 3) PART IS SYMMETRIC ABOUT CENTERLINE 4) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES

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